

AMENDMENTS TO THE SPECIFICATION:

Please amend the caption on page 1, line 3, as follows:

~~FIELD OF THE INVENTION~~ BACKGROUND

Please delete the caption on page 1, line 12, as follows:

~~SUMMARY OF THE INVENTION~~

Please amend the paragraph beginning at page 1, line 13, and continuing to page 1, line 20, as follows:

The technology disclosed herein ~~present invention~~ relates to the radio network part (UTRAN) of a 3rd generation communication system, e.g. a WCDMA-system, to which the following will refer to as an example, and addresses in particular problems that may arise when certain services, which the network is supposed to offer, are unavailable, e.g. due to faults in one of the units or links of said communication system or due to temporary congestions in said communication system.

Please insert the following caption on page 2, after line 6:

SUMMARY

Please amend the paragraphs beginning at page 2, line 6, and continuing to page 4, line 10, as follows:

The technology disclosed herein ~~It is therefore an object of the present invention to~~ increases the availability of services to user equipments even when the UTRAN temporarily does not work properly with regard to a certain service. ~~Within the scope of the present invention,~~ The services relate to such services that can be performed typically in the one network, e.g. the UTRAN, but also in a backup communication network, e.g. the GSM-system. One important example of such services relates, e.g., to emergency

calls. However, the technology disclosed herein~~invention~~ is notwithstanding also applicable for other kinds of services.

The technology disclosed herein also~~It is a further object of the present invention~~ to achieve a prioritisation with respect to certain services between a first and a second communication network, i.e. certain services are preferably performed in one of the communication networks although the user equipment remains associated with one network.

The technology disclosed herein comprises ~~This and other objects of the present invention are achieved by~~ a communication system and a user equipment that are capable of providing the following features:

1) An appropriate network unit ~~12~~ within the UTRAN ~~10~~, e.g. the Radio Network Controller serving said user equipment, comprises means to inform user equipments ~~14~~ that are served by said system ~~10~~ about UTRAN services that are not available and, optionally, additional information that may indicate, e.g., a reason for said unavailability or an estimated time interval within which a service is unavailable. Possible reasons for such service unavailability can be, e.g., a network fault or a traffic congestion.

Alternatively, the network ~~10~~ can instead indicate the still available alternatives in case of a network fault. More generally, the UTRAN ~~10~~ comprises an appropriate status information with regard to the availability of at least a certain range of its services.

2) The network ~~10~~ is capable to re-direct a user equipment ~~14~~ to a backup network ~~11~~, e.g. a GSM-network, in cases where a needed service in the UTRAN ~~10~~ is not available. It is thus possible for the user equipment to use available services in UTRAN while the network or user equipment can arrange that temporarily unavailable services are instead provided by the backup network ~~11~~.

3) A user equipment ~~14~~ comprises ~~comprising~~ means to indicate to the network the priority of new requested services. The priority information can be used by the network, e.g., when the user equipment requests a temporarily unavailable service while already using another network service. Then, the re-direction is only performed if the new service has a higher priority.

It is a first advantage of the technology disclosed herein~~present invention~~ that the service availability is increased although, e.g., a fault or temporary congestion limits or prevents a user equipment from using this service in the network, which it is associated to.

It is thus a further advantage of the technology disclosed herein~~present invention~~ that the overall availability of services can be increased due to the possibility to obtain certain services from the one or other network, which can be used advantageously in congestion situations and, thus, can serve for load control purposes.

It is still another advantage of the technology disclosed herein~~present invention~~ that the time within which a user equipment is not pageable after a RRC Connection Release message and data interrupt times are significantly reduced.

Other objects, advantages and novel features of the technology disclosed herein~~invention~~ will become apparent from the following detailed description of the invention when considered in conjunction with the accompanying drawings and claims.

Please amend the paragraph beginning at page 4, line 14, and continuing to page 4, line 15, as follows:

Figure 1 shows a first and second communication network within which the technology disclosed herein~~present invention~~ can be applied.

Please add the following paragraphs before the paragraph which begins at page 4, line 25:

The technology disclosed herein concerns a communication system and a user equipment that are capable of providing the following features:

1) An appropriate network unit 12 within the UTRAN 10, e.g. the Radio Network Controller serving said user equipment, comprises means to inform user equipments 14 that are served by said system 10 about UTRAN services that are not available and, optionally, additional information that may indicate, e.g., a reason for said unavailability

or an estimated time interval within which a service is unavailable. Possible reasons for such service unavailability can be, e.g., a network fault or a traffic congestion.

Alternatively, the network 10 can instead indicate the still available alternatives in case of a network fault. More generally, the UTRAN 10 comprises an appropriate status information with regard to the availability of at least a certain range of its services.

2) The network 10 is capable to re-direct a user equipment 14 to a backup network 11, e.g. a GSM-network, in cases where a needed service in the UTRAN 10 is not available. It is thus possible for the user equipment to use available services in UTRAN while the network or user equipment can arrange that temporarily unavailable services are instead provided by the backup network 11.

3) A user equipment 14 comprises means to indicate to the network the priority of new requested services. The priority information can be used by the network, e.g., when the user equipment requests a temporarily unavailable service while already using another network service. Then, the re-direction is only performed if the new service has a higher priority.

Please amend the paragraphs beginning at page 4, line 25, and continuing to page 6, line 2, as follows:

According to a first aspect of the ~~technology disclosed herein~~^{present invention} the communication system 10 comprises means to inform user equipments 14 that are served by said system about the availability of UTRAN services. This network means is capable to inform the user equipment 14 about services, or at least a certain range of services, that are not available or inform it about available alternatives for the use of a certain requested service. It is then up to the user equipment, or the user, to select the appropriate network when requesting for a new service. This can be realised by means of including such availability information in an appropriate information message that is sent within certain time periods, e.g. the system information that is updated periodically and sent to the user equipment 14. The information element transmitted in such a message should be such

that all user equipments are requested to read this information when the system information is updated. This could be achieved by applying mechanisms that are currently specified in the Technical Specification document 3GPP TS25.331 "RRC Protocol Specifications" where a system information block is repeatedly sent on the BCCH with a certain periodicity. For instance, a system information block type 1, which currently contains core network related information, can also include indications about service availability. When the system information carrying the indications are updated a Paging type 1 message is sent to all user equipments in the cell with an information about the updated BCCH, which is also specified in said document 3GPP TS25.331. The user equipment 14 comprises the necessary means to perform a switch to the backup network 11 immediately if a service that is requested by the user equipment 14 is indicated to be unavailable. This method implies the advantage that the system information also covers all idle user equipments and user equipments on common channels. Alternatively, it would be possible to include availability information in a dedicated message, e.g. in the UTRAN mobility information, and send this information to the user equipments on dedicated channels whenever the information changes.

In a conceivable example embodiment of the present invention, the user equipment comprises means to inform the user about the unavailable service, either immediately or as soon as the user takes any actions to request an unavailable service. By that the user is also able to choose the appropriate priority level for a new requested service.

Please amend the paragraph beginning at page 6, line 16, and continuing to page 7, line 2, as follows:

According to a second aspect of the technology disclosed herein~~present invention~~ the network 10 is capable to re-direct a user equipment 14 to a backup network 11 in cases where a needed service in the UTRAN 10 is not available. The following describes thus an embodiment where the network arranges said re-direction autonomously with

consideration of the assigned priority for said service where the user equipment is not involved in the decision for re-directing. There could be several reasons that services are not available: Link interruption, e.g. an Iu-link break, various congestion situations in the communication system, or resource shortages, e.g. for a call setup. This is true both when the user equipment 14 already applies a certain service that suddenly becomes unavailable or when the user equipment 14 requests for a new service. The user equipment can only apply services in one network at a time whereby the communication network 10 comprises the necessary means that enable the user equipment 14 to use those services that are still available in its present communication network 10 and re-direct the user equipment 14 to a backup network 11 if a requested service is not available but offered in said backup network 11.

Please insert the following new paragraph on page 7, between lines 2 and 3:

Figure 2 illustrates an RRC Connection Establishment procedure in UTRAN, with its messages 21, 22, and 23. Figure 3 illustrates the RRC Connection Release procedure in UTRAN, with its messages 31 and 32.

Please amend the paragraphs beginning at page 9, line 10, and continuing to page 10, line 7, as follows:

The technology disclosed herein~~present invention~~ also allows shortening times within which a user equipment 14 is not pageable after a RRC Connection Release message and shortening of data interrupt times. This becomes apparent when assuming, e.g., that the UTRAN 10 releases a packet-switched connection, e.g. due to a congestion. Then, the data transfer interrupt time might be less if the user equipment 14 is directed to the backup network 11 after a RRC Connection Release message compared to the time during which the user equipment 14 could not transmit any data at all until the congestion in the original network 10 has been resolved. When assuming on the other hand that, e.g., the core network, or connections to it, do not work properly it would not be possible to page user equipments 14. In this case the time during which the user equipment 14 is not

pageable can be significantly reduced by re-directing said user equipment 14 to the backup network 11 after a RRC Connection Release instead of waiting until the original network 10 works properly again.

When seen from the perspective of the user equipment, the technology disclosed herein~~present invention~~ enables the user equipment 14 to inform the UTRAN 10 about the priority of requested services. In order for the UTRAN 10 to make the right decisions regarding whether a user equipment 14 should be re-directed to a backup network 11 or not it is important that the user has a possibility to inform the UTRAN 10 about the priority of a requested service and if current services should be released to make sure that the new attempt will work. In order to cover service requests both for the idle user equipments and user equipments that already are connected, the indications for "priority" and "allow to release other services" are both included in the RRC Connection Request, the Initial Direct Transfer, the UL Direct Transfer, and the Cell Update.